Project 1c1 - Group 3 Section 2

PART 1: Food Delivery MVP - Combined 15 Use Cases

1. Customer Registration & Login

Primary Actor: Customer | **Supporting Actors**: Identity Service, Auth Service, Email/SMS Provider

Preconditions: Valid phone number or email; internet connectivity; app installed

Main Flow:

1. Customer opens app and selects "Sign Up" or "Login"
2. System prompts for phone/email and password or OTP verification
3. System validates credentials with identity service and creates session
4. Customer lands on home screen with location prompt for delivery setup
5. Profile created with basic preferences and payment method placeholder

Subflows:

- S1: OTP-based registration for faster signup without password complexity
- S2: Auto-login for returning users with saved authentication tokens
- S3: Social login integration (Google/Apple) for streamlined onboarding

Alternative Flows:

- A1: Invalid credentials → retry with clear error messaging
- A2: Account not found → suggest signup with pre-filled information
- A3: Network failure → cache credentials locally and sync when connected

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2. Set Delivery Location & Browse Restaurants

Primary Actor: Customer | **Supporting Actors**: Maps/GPS SDK, Catalog Service, Geocoding Service

Preconditions: Customer logged in; GPS permission granted or manual address capability

Main Flow:

1. Customer sets delivery location via GPS detection or manual address entry
2. System validates address with geocoding service and confirms delivery zone coverage

3. System fetches and displays available restaurants serving the confirmed location
4. Restaurants shown with name, cuisine type, rating, estimated delivery time, and fees
5. Customer can search, filter by cuisine/delivery time, or select restaurant to view menu

Subflows:

- S1: Save multiple addresses (home, work, other) for quick selection
- S2: Manual address entry with autocomplete suggestions for accuracy
- S3: Search restaurants by name, cuisine type, or specific dietary requirements

Alternative Flows:

- A1: GPS unavailable → fallback to manual entry with address validation
- A2: Address outside delivery zone → suggest nearest coverage area or alternative locations
- A3: No restaurants available → show empty state with option to change location

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3. View Menu & Add Items to Cart

Primary Actor: Customer | **Supporting Actors**: Catalog Service, Pricing Service, Inventory Service

Preconditions: Restaurant selected; menu data available; items in stock

Main Flow:

1. Customer views restaurant menu organized by categories with prices and descriptions
2. Customer selects menu item to view detailed information including dietary badges and customization options
3. Customer specifies quantity, basic customizations (size, spice level), and any special instructions
4. System calculates item total including customizations and adds to cart with running subtotal
5. Cart updates with taxes, delivery fees, and displays minimum order threshold status

Subflows:

- S1: Limited customization options for MVP (size variations, spice level, basic add-ons)
- S2: Add special dietary instructions as free-text notes for restaurant preparation
- S3: View and modify cart contents including quantity adjustments and item removal

Alternative Flows:

- A1: Item out of stock → display unavailable status with suggested alternatives
- A2: Price changes during session → update cart with notification of new pricing
- A3: Minimum order not met → display clear threshold requirement with suggestions

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4. Promo Code and Checkout

Primary Actor: Customer | **Supporting Actors**: Promo Engine, Payment Gateway, Tax Service

Preconditions: Items in cart meeting minimum requirements; valid payment method available

Main Flow:

1. Customer proceeds to checkout and reviews order summary with itemized pricing
2. Customer enters promotional code in designated field during checkout process
3. System validates promo code eligibility, conditions, and applies appropriate discount
4. Customer confirms delivery address, selects payment method, and adds optional rider tip
5. System processes payment authorization and creates confirmed order with unique ID

Subflows:

- S1: Auto-apply best available promotional offer without requiring manual code entry
- S2: Save payment methods securely for future orders with tokenization
- S3: Add rider tip during checkout with suggested percentage amounts (15%, 18%, 20%)

Alternative Flows:

- A1: Invalid promo code → show error with suggestions for current available offers
- A2: Payment authorization fails → retry mechanism or request alternative payment method
- A3: Address validation fails → prompt for correction with suggested alternatives

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5. Restaurant Registration & Onboarding

Primary Actor: Restaurant Owner | **Supporting Actors**: Admin Service, Document Storage, Identity Service

Preconditions: Valid business license; willingness to provide menu data; internet access

Main Flow:

1. Restaurant owner accesses merchant portal and initiates registration process
2. System collects business information including name, address, operating hours, contact details
3. Owner uploads menu items with names, descriptions, prices, and basic dietary tags
4. Admin reviews application, verifies business credentials, and approves account activation
5. Restaurant account activated with access to order management dashboard and training materials

Subflows:

- S1: Bulk menu upload capability using CSV templates for restaurants with extensive offerings
- S2: Add dietary tags and allergen information to menu items for customer filtering
- S3: Set operating hours and delivery zones with custom availability scheduling

Alternative Flows:

- A1: Missing or invalid business details → error notification with specific correction requests
- A2: Duplicate restaurant detected → flagged for administrative review and verification
- A3: Pending approval status → restaurant cannot accept orders until admin verification complete

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6. Menu Management (Restaurant)

Primary Actor: Restaurant Staff | **Supporting Actors**: Menu Service, Image Storage, Pricing Engine

Preconditions: Restaurant account approved and active; menu items defined with pricing

Main Flow:

1. Restaurant accesses menu management interface with intuitive item creation tools
2. Staff adds or edits menu items with comprehensive details including descriptions and pricing
3. Items organized into logical categories with availability toggles and preparation time estimates
4. System validates menu data for completeness and pricing accuracy before publishing
5. Updated menu becomes live for customer viewing with proper categorization and search optimization

Subflows:

- S1: Copy existing menu items to create variations or seasonal offerings efficiently
- S2: Set item availability status (available, out of stock, seasonal) with scheduling options
- S3: Upload high-quality item images to enhance menu presentation and customer appeal

Alternative Flows:

- A1: Invalid menu data → validation errors displayed with specific correction guidance
- A2: System maintenance during updates → save changes as draft until publishing capability restored
- A3: Conflicting simultaneous edits → conflict warning with manual resolution interface

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7. Order Management (Restaurant)

Primary Actor: Restaurant Staff | **Supporting Actors**: Order Management System, Kitchen Display, Notification Service

Preconditions: Restaurant logged in and operational; customer orders received

Main Flow:

1. Restaurant receives order notification with complete details including items and special instructions
2. Staff reviews order requirements, checks ingredient availability, and confirms preparation capability
3. Restaurant accepts order and provides realistic preparation time estimate based on current kitchen load
4. Kitchen staff follows order specifications while updating preparation status through interface
5. Order marked ready for pickup when complete, triggering automatic rider assignment notification

Subflows:

- S1: Reject incoming orders with specific reasons when unable to fulfill due to capacity or ingredients
- S2: Modify preparation time estimates during busy periods for accurate customer expectations
- S3: Contact customers directly for clarification on special instructions or dietary requirements

Alternative Flows:

- A1: No response within timeout period → system automatically cancels order with customer notification
- A2: Restaurant cancels accepted order → immediate customer notification with full refund processing
- A3: System connection lost → cache status updates locally and synchronize when connection restored

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8. Driver Registration & Availability

Primary Actor: Driver | **Supporting Actors**: Admin Service, Payment Service, Identity Verification

Preconditions: Valid driver credentials; willingness to provide payout information; vehicle access

Main Flow:

1. Driver opens app and initiates registration with personal information and vehicle details

2. System collects payout information, bank details, and basic identity verification documents
3. Admin reviews driver application, verifies credentials, and approves account for activation
4. Driver sets availability status to "Online" and becomes eligible for order assignment
5. System adds driver to available pool for dispatch matching with nearby restaurant orders

Subflows:

- S1: Upload driver license and vehicle registration for verification (optional in MVP)
- S2: Edit payout details and availability schedule through driver profile management
- S3: Complete basic platform training covering delivery protocols and customer service standards

Alternative Flows:

- A1: Incomplete registration details → request specific corrections with clear requirements
- A2: Duplicate driver account detected → flagged for administrative review and account resolution
- A3: Pending approval status → driver cannot accept delivery assignments until verification complete

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9. Order Assignment & Dispatch

Primary Actor: System/Admin | **Supporting Actors**: Dispatch Service, Driver Pool, Route Optimization

Preconditions: Order ready for pickup; drivers available in service area; dispatch system operational

Main Flow:

1. System identifies available drivers within reasonable proximity to restaurant location
2. Dispatch service broadcasts order to qualified drivers with estimated payout and route information
3. First driver to accept assignment receives confirmation with pickup and delivery details
4. System updates order status and notifies customer of driver assignment with estimated timing
5. Driver receives complete order information including customer contact and special delivery instructions

Subflows:

- S1: Automatic reassignment if assigned driver cancels before pickup with minimal delay
- S2: Priority matching for drivers with high ratings or proximity for optimal service quality
- S3: Multiple order assignments for efficient routing when driver capacity and timing allow

Alternative Flows:

- A1: No drivers accept assignment → extend search radius or delay order with customer notification
- A2: Driver cancels after assignment → immediate reassignment with updated customer communication
- A3: Dispatch system failure → fallback to manual assignment with administrative intervention

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10. Order Pickup & Delivery

Primary Actor: Driver | **Supporting Actors**: Restaurant Staff, Maps SDK, Customer

Preconditions: Driver assigned and en route; order prepared and ready; customer available

Main Flow:

1. Driver arrives at restaurant and presents order ID for staff verification
2. Restaurant staff confirms order completeness and hands package to driver with any special handling notes
3. Driver marks order as picked up and begins navigation to customer delivery address
4. Driver arrives at delivery location and contacts customer if necessary for coordination
5. Driver completes delivery, obtains customer confirmation, and marks order as delivered in system

Subflows:

- S1: Contact restaurant or customer directly through app for coordination or clarification
- S2: Photo proof of delivery for contactless deliveries or when requested by customer
- S3: Handle cash-on-delivery payments with proper change and receipt procedures

Alternative Flows:

- A1: Order not ready upon arrival → wait reasonable time or escalate for reassignment
- A2: Customer unreachable at delivery → follow failed delivery protocol with multiple contact attempts
- A3: Delivery address issues → communicate with customer for clarification and resolution

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11. Order Tracking & Notifications

Primary Actor: Customer | **Supporting Actors**: Notification Service, Order Management System, GPS Tracking

Preconditions: Order placed and confirmed; notification preferences enabled; tracking system operational

Main Flow:

1. System automatically sends order status updates at each milestone (confirmed, preparing, pickup, delivery)
2. Customer receives push notifications with estimated timing and relevant order information
3. Customer can access detailed tracking screen showing current status and estimated delivery time
4. Real-time location updates provided once driver begins delivery route to customer address
5. Final delivery confirmation sent with option to rate experience and provide feedback

Subflows:

- S1: SMS fallback notifications when push notifications disabled or device unavailable
- S2: In-app timeline display showing complete order progress with estimated completion times
- S3: Proactive delay notifications with updated timing when significant changes occur

Alternative Flows:

- A1: Notification delivery failure → customer can manually refresh status through app interface
- A2: Significant timing changes → immediate update notification with explanation and revised estimates
- A3: Tracking system outage → display last known status with manual refresh capability

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12. In-App Communication

Primary Actor: Customer/Driver | **Supporting Actors**: Chat Service, Notification System, Content Moderation

Preconditions: Active order with driver assignment; communication system operational

Main Flow:

1. Customer or driver initiates chat from order interface when coordination neededMessages exchanged for delivery coordination including address clarification or timing updates
2. Chat session remains active throughout delivery with message history maintained
3. Session automatically archives after delivery completion for reference and quality assurance

Subflows:

- S1: Quick message templates for common communications (arriving, delivered, delayed)
- S2: Location sharing capability within chat for precise delivery coordination

- S3: Escalation to customer support when issues cannot be resolved through direct communication

Alternative Flows:

- A1: Chat service unavailable → fallback to direct phone call option with provided contact numbers
- A2: Inappropriate message content → content moderation with warning system and reporting capability
- A3: Communication breakdown → automatic customer support escalation with context preservation

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13. Payment Processing & Tips

Primary Actor: Customer/System | **Supporting Actors**: Payment Gateway, Driver Payout Service, Tax Service

Preconditions: Order confirmed; valid payment method selected; driver assigned

Main Flow:

1. System processes payment authorization for order total including items, fees, taxes, and tip
2. Payment gateway securely handles transaction with fraud detection and authorization confirmation
3. System allocates tip amount to assigned driver's earnings upon successful delivery completion
4. Driver receives tip notification and amount added to payout balance for next scheduled payment
5. Customer receives payment confirmation with itemized receipt and transaction reference

Subflows:

- S1: Cash-on-delivery handling with driver collection and proper change procedures
- S2: Split payment methods when customers use multiple payment sources for single order
- S3: Automatic tip suggestions based on order value with custom amount entry option

Alternative Flows:

- A1: Payment authorization fails → retry mechanism with alternative payment method options
- A2: Tip processing error → separate tip transaction retry while maintaining driver allocation
- A3: Refund processing for cancelled orders → immediate refund initiation with confirmation tracking

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14. Driver Earnings & Payout

Primary Actor: Driver | **Supporting Actors**: Payout Service, Banking Integration, Tax Reporting

Preconditions: Completed deliveries recorded; payout method configured; minimum earnings threshold met

Main Flow:

1. System calculates driver earnings including base delivery fees, tips, and any applicable bonuses
2. Driver can view earnings dashboard with daily, weekly, and monthly summaries
3. Automatic payout processing occurs on scheduled basis (daily/weekly) to configured bank account
4. Driver receives payout confirmation with detailed breakdown of earnings and deductions
5. Tax reporting information maintained for driver access during filing periods

Subflows:

- S1: Edit payout method and banking information through secure driver profile management
- S2: View detailed earnings breakdown including individual delivery payments and customer tips
- S3: Download tax summary reports for quarterly or annual tax filing requirements

Alternative Flows:

- A1: Payout processing failure → retry mechanism with driver notification and alternative timing
- A2: Banking information invalid → prompt for correction with payout hold until resolved
- A3: Minimum payout threshold not met → earnings accumulate until threshold reached with clear notification

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15. Customer Support & Issue Resolution

Primary Actor: Customer/Driver/Restaurant | **Supporting Actors**: Support Service, Refund Processing, Quality Assurance

Preconditions: User experiencing issue requiring assistance; support system operational

Main Flow:

1. User accesses support through help section or emergency contact during active orders
2. System provides self-service options for common issues with guided troubleshooting steps
3. Complex issues escalated to human support with full context and order history provided

4. Support agent investigates issue using available tools and coordinates resolution with relevant parties
5. Resolution implemented with appropriate compensation (refunds, credits, re-delivery) and follow-up confirmation

Subflows:

- S1: FAQ and self-service resolution for common issues like order modifications or delivery delays
- S2: Live chat support during business hours with queue management and estimated wait times
- S3: Priority escalation for safety issues, payment problems, or service disruptions

Alternative Flows:

- A1: Support system overloaded → queue management with callback option and estimated response time
- A2: Issue requires multi-party coordination → support facilitates communication between customer, restaurant, and driver
- A3: Resolution not possible → appropriate compensation with clear explanation and process improvement documentation

PART 2: REFLECTION DOCUMENT

How We Decided What NOT to Do

Our elimination process used three critical filters to identify truly essential functionality for market validation.

Business Model Validation Priority: We eliminated features that don't test core business viability. Advanced analytics, loyalty programs, subscription services, group ordering, and multi-restaurant carts create complexity without validating whether people want reliable food delivery - our primary hypothesis. These optimize an already-working business rather than proving the fundamental model functions.

Technical Risk Management: We chose proven implementations over sophisticated automated systems. AI-powered route optimization, dynamic pricing algorithms, advanced recommendations, and fraud detection require significant development resources with uncertain outcomes. Manual processes (admin restaurant approval, basic driver assignment) achieve similar results with lower risk and faster implementation.

Market Entry Speed: Features requiring complex integrations or regulatory compliance were deferred. Instant cash-out involves financial regulation, healthcare integrations need HIPAA compliance, and voice search requires NLP infrastructure. These create barriers that could delay market entry without proving core assumptions.

Critical Eliminations: Gamification systems, inventory integration, real-time demand analytics, customer segmentation, social features, and subscription billing were cut as they require extensive infrastructure without directly validating reliable food delivery service.

Negative Impacts and Stakeholder Disappointments

Customer Acquisition Challenges: Without loyalty programs or subscriptions, customers receive no rewards that competitors offer, potentially increasing acquisition. Group ordering absence eliminates office teams and social dining, reducing addressable market size. Customers expect AI features like predictive ordering that our basic interface cannot provide, making retention challenging.

Restaurant Revenue Losses: Restaurants lose revenue opportunities without dynamic pricing. No customer analytics prevents understanding ordering patterns or creating data-driven strategies. Without promotional tools, restaurants cannot compete effectively during slow periods or target marketing.

Driver Economic Impact: Manual assignment reduces efficiency compared to algorithmic matching, directly impacting earnings. No instant cash-out creates financial stress for gig workers needing immediate income. Without demand heatmaps, drivers cannot position strategically, leading to longer wait times and reduced earning potential.

Platform Competitive Disadvantages: Dependence on transaction fees without subscription revenue limits pricing flexibility. Missing social features mean higher acquisition costs and slower organic growth compared to platforms with viral mechanisms.

Changes Made to Appease Stakeholders

Customer Value Through Service Excellence: We positioned simplicity as competitive advantage. Enhanced communication (in-app chat, comprehensive notifications) provides superior customer-driver coordination. Comprehensive promo codes enable acquisition incentives without complex infrastructure. Detailed tracking with proactive notifications builds trust, while integrated tipping creates positive experiences.

Restaurant Operational Support: Intuitive menu management with bulk upload reduces burden while maintaining accuracy. Flexible order management allows capacity control during busy periods. Streamlined onboarding with admin support helps restaurants succeed quickly. Clear communication channels reduce complications and improve fulfillment rates.

Driver Income Optimization: Manual assignment considers location and availability to maximize opportunities. Integrated tipping provides immediate income boosts aligned with service quality. Comprehensive earnings tracking supports tax planning. Customer communication reduces failed deliveries that waste time.

Platform Growth Strategy: Clear positioning as reliable, efficient choice creates competitive advantage through operational excellence rather than feature accumulation. Modular architecture supports future integration without technical debt, demonstrating long-term viability while delivering immediate value through excellent core functionality execution.

Prompts History/Links

https://claude.ai/share/34bc0683-7823-4e9a-a4b3-945c21c46cd2

https://chatgpt.com/share/68c4524f-e210-8003-8cfd-bee519501c38

https://www.perplexity.ai/search/5a1e98bb-5ef4-4d48-a110-10822557fdbd

https://g.co/gemini/share/c4f1c8cd4627